NATIONAL DEFENSE STUDENT LOAN REPAYMENTS AT KANSAS STATE UNIVERSITY AS RELATED TO GPA AND LOAN SIZE

by

DONALD G. MILLER

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Approved by

Herbert E. Kaiser
Major Professor

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APPRECIATION

The author would like to express special appreciation to the late H. W. Kennedy, Director of Aid, Award & Veteran Services at Kansas State University. Mr. Kennedy gave special assistance in helping to set up this research project. His assistance, suggestions and cooperation were essential in the collection and analysis of this information. Although the study was not completed at the time of Mr. Kennedy's sudden death in January, 1969, his interest and enthusiasm helped make this a meaningful and, hopefully, a useful study.

A sincere thanks is expressed to Mr. Gerald Bergen, who was appointed Acting Director of the Aid, Award & Veteran Services office following Mr. Kennedy's death, for the continued support and cooperation of his office, and to Dr. Herbert Kaiser, Professor of Education, for his assistance as Major Professor and consultant for this work.

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CHAPTER I

THE PROBLEM, DEFINITIONS AND HYPOTHESIS

In 1958 the United States Government enacted the National Defense Education Act (Public Law 85-864) which under title II established a low cost student program called the National Defense Student Loan (NDSL). This act allowed many colleges and universities to enter the loan business on a large scale. The institutions were given the responsibility of granting and distributing the loan funds, but more importantly the universities were also obligated for the collection of the loans.

In 1964, the U. S. Comptroller General's office reported to Congress that an alarming percentage (6.4) of students had been lax in repaying government loans under the National Defense Student Loan program. The Comptroller General said that the U. S. Office of Education had failed to establish proper collection procedures. The Director of USOE Bureau of Educational Assistance Programs explained, "The students deal directly with the school, not the government, the responsibility (for loan collection) lies with the colleges."[1]

Added to the responsibility for collection which clearly rests with the university is the concern over repayment delinquencies. This gives rise to the question, "Which student is the best loan risk?"

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[1]Beg, Borrow, Bargain, Newsweek, Nov., 1964, p. 67.

I. THE PROBLEM

Statement of the problem. The purpose of this study was 1) to determine the relationship between loan repayment habits and grade point average (GPA)and 2) the relationship between loan size and repayment habits. Repayment habits were grouped into two categories, delinquent payments and prepayment of loans. The study of delinquencies considered eight levels: 1) one or more delinquent payments, 2) three or more months of delinquency, 3) six or more months of delinquency, 4) twelve or more months of delinquency, 5) twenty-four or more months of delinquency, 6) thirty-six or more months of delinquency, 7) forty-eight or more months of delinquency and 8) sixty or more months of delinquency.

Importance of the study. The National Defense Student Loan program was established to provide low cost loans to the superior student who, because of financial need, would not be able to complete his education. With the program approximately ten years old, several loans were in the repayment stages. As the loan collection personnel had difficulty in collecting some payments, the question was asked, "Can more careful selection reduce collection problems?" This study, using indicators of the two main criteria for loans (academic and need) as outlined by the law, attempted to answer this question. There was no indication of any study such as this involving the NDSL program.

It must be remembered that the prime purpose of the loan program was granting loans so that students might complete their education.

II. DEFINITIONS OF TERMS USED

NDSL. NDSL refers to the National Defense Student Loan program as established by Title II of the National Defense Education Act of 1958 (PL 85-864) and subsequent amendments and extensions.

GPA. GPA refers to the grade point average as accumulated for course work at Kansas State University as of the date of termination. This is calculated on a 4.000 grading system. (A=4.000, B=3.000, C=2.000, D=1.000, F=0.000).

High GPA. High GPA was an accumulated average of 3.000 or better.

Medium GPA. Medium GPA was an accumulated GPA of 2.200-2.999.

Minimal GPA. Minimal GPA was an accumulated GPA below 2.200.

Delinquent. A repayment was so designated when the amount due was not received by the Student Loan Department of the Comptrollers office at Kansas State University before the 21st day following the date due.

Number of Delinquencies. The number of delinquencies was indicated by the number of repayments that were delinquent. A student who made no repayments was listed as being belinquent only once, even though several payments were past due. However, these individuals were studied as to length of delinquencies.

Months of Delinquencies. The months of delinquencies indicated the number of months for which the payment or payments were delinquent.

Prepaid. A loan was considered prepaid when the entire or major portion of the principal was repayed before the date of normally scheduled repayments.

Loan size. The size of the loan was the NDSL outstanding as of the date on which the student terminated his education at Kansas State University.

Large loan. A large loan was any loan of $3000 or more.

Medium loan. A medium loan was any loan between $1500 and $2999.

Modest loan. A modest loan was a loan below $1500.

III. STATEMENT OF HYPOTHESES

Four sets of hypotheses were outlined regarding the significance of grades and loan size on repayment habits.

Hypothesis #1

Ho^1: There was no significant difference in the proportion of delinquencies on NDSL payments among borrowers having high, medium, or minimal GPA's.

Ha^1: Either: NDSL borrowers with high GPA had proportionally less repayment delinquencies than borrowers with medium GPA which in turn had proportionally less delinquencies than borrowers with minimal GPA;

or

NDSL borrowers with high GPA had proportionally less delinquencies than borrowers with minimal GPA which in turn had proportionally less delinquencies than borrowers with medium GPA;

or

NDSL borrowers with minimal GPA had proportionally less delinquencies than borrowers with medium GPA which in turn had proportionally less delinquencies than borrowers with high GPA.

If the null hypothesis was not accepted, the following were suggested reasons for the alternate hypotheses:

1. The student with higher grades, having demonstrated more responsibility in the classroom, would obtain a higher paying position, be better enabled to make the repayments, and more responsible in repaying the loan when due. With this trend of thought it would be expected that the number of delinquencies would be less for students with the high GPA and greater for students with minimal GPA.

2. Students with the highest GPA would be the most responsible borrowers with the least delinquencies. The student with minimal grades would be that student who has had to work harder to maintain a satisfactory GPA and thereby would be more dependable, hard working, and have less probability of delinquency than students with medium grades. Students with medium GPA would include those who had the ability to make high grades, but because of failure to meet higher grade point requirements demonstrated the lack of responsibility. This would carry over into post-college attitudes and would be reflected in higher probability of delinquency.

3. The complete reversal of the first line of thought may be true. Students with minimal GPA may have had to work harder to make satisfactory grades and this may be demonstrated by having the lowest loan delinquency records while students who had high GPA may show less concern with meeting loan responsibility and have the greater loan delinquencies.

Hypothesis #2

Ho^2: There was no significant difference in the proportion of delinquencies among borrowers having large, medium, or modest size loans.

Ha^2: Borrowers with modest loans had proportionally less delinquencies than those with medium loans which in turn had proportionally less delinquencies than borrowers with large loans.

Failure to accept the null hypothesis would suggest that students with smaller loans, and therefore smaller installments, had less delinquencies.

Hypothesis #3

Ho^3: There was no significant difference in the proportions of prepaid loans among borrowers with high, medium, and minimal GPA.

Ha^3: Either: NDSL borrowers with high GPA had a higher proportion of payments than borrowers with a medium GPA which in turn had higher proportion of prepayments than borrowers with a minimal GPA;

or

Borrowers with high GPA had a higher proportion of prepayments than borrowers with minimal GPA which in turn had a higher proportion of prepayments than borrowers with medium GPA;

or

Borrowers with minimal GPA had a higher proportion of prepayments than borrowers with medium GPA which in turn had a higher proportion of prepayments than borrowers with a high GPA.

Failure to accept the null hypothesis would suggest the same trend as discussed in hypothesis #1.

Hypothesis #4

Ho^4: There was no significant difference in the proportions of prepayment of loans among borrowers with large, medium, and modest size loans.

$\underline{Ha}^4$: Borrowers with modest loans had a higher proportion of prepayments than those with medium loans which in turn had a higher proportion of prepayments than borrowers with large loans.

Failure to accept the null hypothesis would suggest that borrowers with smaller loans tended to prepay their loans more readily than those with larger loans.

The four hypotheses were tested with a 3x2 contingency chi-square method.

CHAPTER II

REVIEW OF THE LITERATURE

Although the NDSL program was among the largest student loan programs in operation, no studies could be found dealing with collection of this loan program. The program has only been in operation ten years which may help explain the lack of published information.

Articles on Loans and Losses

Harrington[2] studied the practice of determining student eligibility for emergency loans based on grades. He selected a number of accounts and found a correlation between grades and repayment records of .126 for male students and .071 for female students. This study indicated that selection of students eligible for loans on the basis of grades was not justified.

Gatchell[3] made a survey of colleges regarding the availability of long term student loans and losses resulting from this type of loan. Twenty-nine colleges reported having long term loans secured with only a personal unsecured note. The normal repayment on these loans was 95% with one school reporting losses of 35%.

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[2]Harrington, Charles, "An Evaluation of an Emergency Student Loan Program," Journal of College and Student Personnel, 45:234-237, June, 1964.

[3]Gatchell, Early, "A Bank for Students," The Survey, 47:949-950.

Ormes[4] stated that loss from student loans based on records of a thirty year period and several hundred students was limited to 5%.

Hamon[5], founder of the Hamon Foundation for student loans, reported that a strict business policy is necessary in making student loans. Not only is the student able to obtain funds for education but he also develops character and financial responsibility. Hamon wrote:

> We consider the carefully selected student a sound financial risk for loans made on an easy installment repayment basis in accordance with our plan.

The Hamon Foundation researchers, after studying student loans, took a stand against administration of student loans on a charity or parentalistic basis. The criteria for selection of loan recipients was not discussed in this article and no further information was located.

NDSL and KSU Loan Procedures

NDSL Loan Granting Procedures

Elbers[6] outlined the provisions for the National Defense Education Act, Title II:

> In making loans the institution must give preference to students with superior academic background who plan to become public elementary and secondary school teachers and to students whose academic background indicates a superior capacity for or preparation in science, mathematics, engineering, or a modern foreign language.

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[4]Ormes, F.R., "Wabash College Finds the Record Good on Repayment of Student Loans," Colleges & University Business, 22:23-75, 1957.

[5]Hamon, W.E., "Students Who Pay Back," The Survey, 52:581, September, 1924

[6]Elbers, F.W., "National Defense Education Act and Higher Education," Higher Education, 16(1):8-16, September, 1959.

The Office of Education[7] stated that students meeting the following criteria should receive priority:

1. Students with superior academic background who express a desire to teach in elementary and secondary schools.
2. Students whose academic background indicates a superior capacity or preparation in science, mathematics, engineering or a modern foreign language.

The manual also stated[8]:

The primary and most essential condition of an applicant's eligibility for a National Defense Student Loan is in his need of the requested loan in order to complete his course of study.

In determining financial need, three items were to be considered:

1. The income, assets, and resources of the family.
2. The income, assets, and resources of applicant.
3. The cost reasonably necessary for the student's attendance.

KSU Loan Granting Procedures

The University Loan Committee[9] outlined the requirements and procedures for the National Defense Student Loans as follows:

A. The student loan program is operated on a business basis giving the borrower an experience (in many cases his first) in such methods of financing.

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[7]National Defense Student Loan Program, Manual of General Information & Instructions, 1959-60, US Dept of HEW Office of Education, p. 9.

[8]Ibid., p. 12.

[9]Student Loan Funds Program Policies & Operating Procedures, Kansas State University, December 7, 1960.

1. ...applicants for NDEA funds must be full-time students
2. The student must be making normal progress toward a degree
3. Generally, the student must have completed one semester at KSU and be a sophomore, except that:
    a. Graduating high school seniors in the upper one half of their graduating class may apply for a NDEA loan for their freshman year. Loans are rarely granted to students below the upper quarter of their class.

B. The law provides that special consideration in selection of loan recipients be given to students with superior academic background who express a desire to teach in elementary or secondary school and whose academic background indicates a superior capacity or preparation in science, mathematics, engineering or a modern foreign language.

C. Before receiving the loan the student must sign the United States Loyalty Affadavid and Oath.

D. Terms of the Loan:
    1. A student may borrow in one year a sum not exceeding $1,000 and during his entire course in higher education a sum not exceeding $5,000.
    2. Borrower must sign a note for his loan.

E. The committee will normally disapprove any loan applicant if, the applicant has failed to establish a need for a loan.

The loan requirements as outlined by both the Office of Education and Kansas State University were set down early in the program's operation and have been revised as necessary.

NDSL Collection Procedures

As reported in Newsweek[10] the Comptroller General said in regard to NDSL repayment that the Office of Education had failed to establish proper collection procedures. The Department of Health, Education and Welfare[11] in the Manual of Procedures defined the role of the institution in collection:

> The institution is responsible for the collection of interest and payment on principal of the loan. In the execution of this responsibility the institution is expected to exercise due dilligence in conformity with the terms of the Act.

Arranging for a Repayment Plan

Responsibility for determining the specific repayment plan to be followed must be shared by the borrower and the institution. However, it is one of the most important program obligations of an institution to make sure that the borrower is not permitted to leave college without having made definite arrangements for repayment of his loan.

The determination of the most appropriate repayment plan can most satisfactorily be made prior to the borrower's separation from the institution, but in order to encourage him to look ahead, some institutions have found it useful to have the borrower tentatively select a prepayment plan at the time the loan is approved.

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[10] Beg, Borrow, Bargain, op. cit., Chapter I.

[11] 1959-60 Manual of Procedure, Ibid., p. 7.

A full or partial repayment of a loan at any time, or a payment in excess of the amount due at a given time in accordance with a repayment schedule, shall be permitted.

KSU Collection Procedures

It is of interest to outline the procedure followed by the Comptroller's Office in collection of NDEA loans[12]. The procedure for collection of monthly repayments are as follows:

1. Send notice the 20th of each month preceeding due date of payment. The monthly prepayment cannot be less than $15 per month, including principal and interest.
2. Send the next monthly statement on the 20th of the next month after the preceeding statement was not paid; send statement for both principal payments due plus interest due on outstanding balance. Also add $1.80 service charge for the preceeding months' delinquent balance and $2.00 for each additional month thereafter.
3. Send letter #211 (Appendix A) the 15th of the month after the second monthly statement is past due.
4. Send letter #212 (Appendix A) 15 days later.
5. Send letter #213 (Appendix A) 15 days later.
6. Call borrower on telephone, if possible, 15 days after letter #213.

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[12]Loan Repayment Section of Manual of Policies and Procedures, "KSU Comptroller's Office," March 1966 Revision.

7. Send letter #214 (Appendix A) 15 days later and the student's academic records should then be attached.
8. Send letter #215 (Appendix A) 15 days later to the Attorney General for collection.

CHAPTER III

METHODS AND PROCEDURES

This chapter outlines the collection of information and statistical testing procedures that were used in this study.

Group Studied

The study group included NDSL borrowers who terminated their education at Kansas State University before September 1966. The reason for using September 1966 as a cut-off date was that these borrowers would have had a minimum of eighteen months of repayments. In eighteen months the borrowers would have a repayment pattern of sufficient length for study. Furthermore, in September of 1966, the Educational Opportunity Grant program was initiated which could reduce the loan amounts of the more needy students.

Exclusions

The following borrowers were excluded from the study:

1. Borrowers who had taken advantage of the Teacher Cancellation Benefits. These were excluded because this cancellation would lower the amounts loaned and thereby bias the information.
2. Borrowers who had deferred repayment because of education continuation, military, or Peace Corps work and had not established a repayment pattern.

3. One borrower was excluded because of confinement in a hospital since termination and had not made repayments.

Collection of Information

A work sheet was used to collect the following information as of January 1, 1969 for each borrower in the study groups. A sample work sheet is included in Appendix B.

Name: Last, first, middle, (maiden). As some of the female borrowers had married after termination and the loan account card was filed according to married names, the maiden names were recorded for the purpose of collecting additional data.

Social security number: The university is presently using the social security number for student identification. It is felt that loan collection will soon be computerized using social security numbers as account numbers. So that the study may be more easily updated for later study, this was included in the information collected.

Termination date: The termination date was recorded as month and year of leaving Kansas State University. This was included so that length of repayment records would be known and also for use in locating GPA at termination.

Amount borrowed: The amount borrowed was the total NDSL amount for which the student had signed on the promissary note.

Repayment plan: Repayment plans were recorded as annual, monthly, or prepaid.

1. Annual: Prior to November 1965, all loans were repaid on an annual schedule with interest starting one year after termination and the first payment due two years after termination.

2. Monthly: In November 1965, a monthly repayment program was started. Monthly repayments and interest started at the first of the tenth month following termination. At that time, borrowers on the annual repayment plan were allowed to change to monthly repayments.

3. Prepaid: Some borrowers elected to repay the loan before the due date. Some of these borrowers started either annual or monthly repayment and later repaid a major portion of the loan in a lump sum before the due date.

Number of delinquencies: This is the number of repayments that were delinquent as defined in Chapter I.

Months of delinquencies: The months of delinquencies indicated the number of months for which the payment or payments were delinquent.

Grade point average: The GPA as defined in Chapter I was obtained from records available in the Office of Aids, Awards, & Veteran Services at Kansas State University.

Computer Coding

The information was punched on cards for analysis using an IBM 1620 computer. Since all information was numerical (except for repayment plan) very little coding was necessary. The repayment plans were coded in a numerical code of:

1. Annual
2. Monthly
3. Prepaid

Statistical Test

In testing the hypotheses as set forth for this study, an adaptation of the chi-square test was used[13].

First, it was assumed that either the null hypothesis or the alternate hypothesis was true; second, that the true alternate hypothesis was unequal among the three groups. Then using a 3x2 chi-square test with two degrees of freedom, the following procedure was used:

1. A regular chi-square test was run.
2. The data were examined, in particular, the arrangement of the best probability estimates.
3. The null hypothesis was not accepted if rejected by the regular chi-square and if the best probability estimates were in the order of one of the inequalities in the alternate hypothesis.

The alpha levels of the tests were computed as to the following:

If the null hypothesis was true, then any of the six possible arrangements of the probability of delinquency were equally likely. Hence the probability of rejecting the null hypothesis and having the best estimates of the true probability of delinquency, in a specific order, given Ho as true, was $\alpha/6$. Therefore since we considered only K possible order in the alternate hypothesis, the true alpha level is $K\alpha/6$.

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[13]Consultation with Richard Beckman, Ph.D. Candidate, and Dr. Conover, Statistics Department, KSU.

Computer Collection of Information

A program was written so that the IBM 1620 computer collected the following information:

Number	Total	High GPA	Medium GPA	Minimal GPA	Modest Loan	Medium Loan	Large Loan
Total	1374	339	709	326	1113	232	29
1 or more Del.	449	87	237	125	356	79	14
3+ month Del.	225	35	117	73	178	42	5
6+ month Del.	118	17	57	44	90	26	2
12+ month Del.	51	7	25	19	39	11	1
24+ month Del.	23	4	12	7	16	7	0
36+ month Del.	18	4	9	5	11	7	0
48+ month Del.	11	2	6	3	9	2	0
60+ month Del.	3	0	2	1	2	1	0
Prepaid	170	52	57	61	167	3	0

CHAPTER IV

ANALYSIS OF DATA

Using the information compiled by the computer the hypotheses were tested with the following results.

Testing Hypothesis #1

Statement of Hypothesis:

Ho^1: $P_1 = P_2 = P_3$

Ha^1: Either $P_1 < P_2 < P_3$

or $P_1 < P_3 < P_2$

or $P_3 < P_2 < P_1$

P_1 is the proportion of borrowers with high GPA that were delinquent.

P_2 is the proportion of borrowers with medium GPA that were delinquent.

P_3 is the proportion of borrowers with minimal GPA that were delinquent.

An appropriate contingency table was set up for each level of delinquency and the regular chi-square value was calculated as set forth in Siegel.[14]

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[14] Seigel, S., NonParametric Statistics for the Behavioral Sciences, McGraw-Hill, New York, 1956, p. 104.

TABLE II

EXAMPLE 3x2 CONTINGENCY TABLE FOR HO[1]

	E X P E C T E D		O B S E R V E D		TOTAL
	Del	Non Del	Del	Non Del	
High GPA	$E_{1,1}$	$E_{1,2}$	$O_{1,1}$	$O_{1,2}$	
Medium GPA	$E_{2,1}$	$E_{2,2}$	$O_{2,1}$	$O_{2,2}$	
Minimal GPA	$E_{3,1}$	$E_{3,2}$	$O_{3,1}$	$O_{3,2}$	
Total					

$$x^2 = \sum_{i=1,2,3}^{3} \sum_{j=1,2}^{2} \frac{(Oij - Eij)^2}{Eij}$$

The following x^2 values were computed:

TABLE III

CALCULATED x^2 VALUES FOR HO[1]

Level of Delinquency	x^2
One or more months	13.039*
Three or more months	17.597*
Six or more months	15.163*
Twelve or more months	6.296*
Twenty-four or more months	.997
Thirty-six or more months	.161
Forty-eight or more months	.321
Sixty or more months	.930

*Sign. at .10 or higher

The critical value for chi-square at alpha = .20 and two degrees of freedom was 3.22[15].

The true alpha level of this test was .10, but as discussed in chapter III the critical alpha value was .20.

The calculated x^2's through 12 or more months of delinquency were greater than the critical level and the null hypothesis was not acceptable up to that level. However, beyond this level of delinquency the null hypothesis was accepted, and grades were not significant in predicting these levels of delinquency.

Then looking at the data the best estimate of the true probability of delinquency was determined and recorded in Table IV.

TABLE IV

BEST ESTIMATE OF TRUE PROBABILITY OF BEING DELINQUENT FOR HO[1]

	Total Study	High GPA	Medium GPA	Minimal GPA
1+	.327	.256	.334	.383
3 mo. +	.163	.103	.165	.223
6 mo. +	.085	.050	.080	.134
12 mo. +	.037	.020	.035	.058
24 mo. +	.016	.011	.016	.0214
36 mo. +	.013	.011	.026	.015
48 mo. +	.008	.005	.008	.009
60 mo. +	.002	.000	.002	.003

[15]Seigel, S., op. cit., p. 249.

This information showed that the correct alternate hypothesis was that portion which stated: NDSL borrowers with high GPA's had proportionally less repayment delinquencies than borrowers with medium GPA's which in turn had proportionally less delinquencies than borrowers with minimal GPA's.

Testing Hypothesis #2

Statement of Hypothesis:

Ho^2: $P_1=P_2=P_3$

Ha^2: $P_1<P_2<P_3$

P_1 is the proportion of borrowers with modest loans that were delinquent.
P_2 is the proportion of borrowers with medium loans that were delinquent.
P_3 is the proportion of borrowers with large loans that were delinquent.

Again an appropriate contingency table was set up for each level of delinquency and the regular chi-square value was calculated.

TABLE V

EXAMPLE 3x2 CONTINGENCY TABLE FOR HO^2

	EXPECTED		OBSERVED		TOTAL
	Del	Non Del	Del	Non Del	
Modest Loan	$E_{1,1}$	$E_{1,2}$	$O_{1,1}$	$O_{1,2}$	
Medium Loan	$E_{2,1}$	$E_{2,2}$	$O_{2,1}$	$O_{2,2}$	
Large Loan	$E_{3,1}$	$E_{3,2}$	$O_{3,1}$	$O_{3,3}$	
Total					

$$x^2 = \sum_{i=1,2}^{2} \sum_{J=1,2,3}^{3} \frac{(Oij - Eij)}{Eij}$$

The following x^2 values were computed for Ho^2.

TABLE VI

CALCULATED x^2 VALUES FOR HO^2

Level of Delinquency	x^2
One or more months	4.136*
Three or more months	.7143
Six or more months	2.5433*
Twelve or more months	.8144
Twenty-four or more months	3.3844*
Thirty-six or more months	6.7079*
Forty-eight or more months	.207
Sixty or more months	.609

*Sign. at .05 or higher

The critical value for chi-square at alpha = .30 and two degrees of freedom was 2.41.

The true alpha level of this test was .05, but as discussed in chapter III, the critical alpha value was .30.

The calculated x^2's were greater than the critical value at four levels: (1) one or more delinquencies, (2) six or more months of delinquency, (3) twenty-four or more months of delinquency, and (4) thirty-six or more months of delinquency. The null hypothesis was not accepted by the regular x^2 at these four levels of delinquency. However, the null hypothesis was accepted by the regular chi-square at the

following levels: (1) three or more months of delinquency, (2) twelve or more months of delinquency, (3) forty-eight or more months of delinquency, and (4) sixty or more months of delinquency.

The data were studied and the best estimate of the true probability of delinquencies was determined.

TABLE VII

BEST ESTIMATE OF TRUE PROBABILITY OF BEING DELINQUENT FOR HO[2]

Level of Delinquency	Modest Loan	Medium Loan	Large Loan
1 or more	.319	.340	.482*
3 or more mo.	.159	.181	.172
6 or more mo.	.080	.112	.068*
12 or more mo.	.035	.047	.034
24 or more mo.	.014	.030	.000*
36 or more mo.	.009	.030	.000*
48 or more mo.	.008	.008	.000
60 or more mo.	.001	.003	.000

*Sign. at.10 or higher.

At a level of delinquency of once or more the size of loan was significant and ordered in the direction of agreement with the suggested alternate hypothesis.

The significance of loan size at the higher levels of delinquency did not uphold the suggested alternate hypothesis. But, rather showed that borrowers with large loans had the least delinquency followed by borrowers with modest loans and then borrowers with

medium loans. Even though a trend was established, the small number of borrowers in the high delinquency levels suggests further study is necessary.

Testing Hypothesis #3

Statement of Hypothesis:

Ho^3: $P_1=P_2=P_3$

Ha^3: $P_1 > P_2 > P_3$

$P_1 > P_3 > P_2$

$P_3 > P_2 > P_1$

P_1 is the proportion of borrowers with high GPA that prepaid loans.
P_2 is the proportion of borrowers with medium GPA that prepaid loans.
P_3 is the proportion of borrowers with minimal GPA that prepaid loans.

The same statistical procedure was followed as in the testing of hypothesis #1, comparing proportions prepaid and non-prepaid loans.

An x^2 of 27.055 was obtained which indicated a definite rejection of the null hypothesis.

The best estimates of the true probability of prepayment were as follows:

High GPA	.153
Medium GPA	.081
Minimal GPA	.187

In studying the data to determine which of the inequalities was appropriate, it was discovered that none of the alternate hypotheses were correct. That is, when the alternate hypotheses were selected it was felt that students with high grades would prepay to a greater proportion and support the reasoning similar to hypothesis #1. The

correct inequality was $P_3 > P_1 > P_2$. The inferences for this unusual finding were discussed in chapter V.

Testing Hypothesis #4

Statement of Hypothesis:

Ho^4: $P_1 = P_2 = P_3$

Ha^4: $P_1 > P_2 > P_3$

P_1 is the proportion of borrowers with modest size loans that were prepaid.

P_2 is the proportion of borrowers with medium size loans that were prepaid.

P_3 is the proportion of borrowers with large loans that were prepaid.

The same procedure was used as in testing hypothesis #2. An x^2 value of 36.921 was obtained. This was considerably above the critical level and rejection of the null hypothesis was indicated.

Examination of the data showed the following best estimate of the true probability of prepayment.

Modest loan	.150
Medium loan	.029
Large loan	.000

CHAPTER V

CONCLUSIONS

After studying the repayment habits of 1374 NDSL borrowers who terminated their education at Kansas State University before September 1, 1966 and had established repayment records, the following conclusions were drawn.

Grades as a Predictor of Delinquency:

From the investigation it may be inferred that borrowers with high grade point averages are less likely to be delinquent with scheduled repayments than borrowers with medium grades. Borrowers with medium grade point averages are in turn less likely to be delinquent with scheduled repayments than borrowers with minimal grades. This is likely to true for each level from one to twelve months of delinquency. For levels after twelve months of delinquency grades are not significant.

It was from the study evident that a good proportion of borrowers after being delinquent once or twice and being reminded of their obligation to make regular repayments, did not repeat as delinquents.

Size of Loan as a Predictor of Delinquencies

The size of loan on repayment habits does not predict as clearly

as grades.

Borrowers with modest loans had less delinquency at the one or more delinquency level, than borrowers with medium loans. There was a great difference between borrowers with medium loans and large loans when related to being delinquent once or more. However, when the same groups were studied as to the proportion having three or more months of delinquency there was no significant difference among the groups.

Again, once a borrower had been reminded of this payment obligation the delinquency rate, as with grades, dropped markedly. It may be suggested that the borrower did not plan for that first payment. Therefore, borrowers with large loans and larger repayments, may require more time in raising that first payment, thereby becoming delinquent at least once. After making the first payment, the borrower then planned toward this payment and was able to make payments on schedule. In turn, borrowers with smaller loans, having smaller installments, would be able to meet the payment more easily.

Loans Requiring Legal Action

With the probability of having at least one delinquency at .327, the prime concern is with those borrowers that become delinquent to the point of requiring legal action.

Out of the 1374 borrowers studied, it became necessary to turn over seventeen accounts to the State Attorney General for collection. This is 1.237 percent of the borrowers. Of these seventeen borrowers, only six had made some attempt to make restitution for these delinquencies.

Borrowers that Prepay

One hundred seventy or 12.37 percent of the group studied prepaid loans. The probability of prepaying within each group of borrowers was not what was anticipated. It was expected that students with higher grade point averages would have the better prepayment record. It was found that borrowers with minimal GPA had a higher prepayment record (18.71%) than borrowers with high GPA (15.33%), which in turn had a higher prepayment record than borrowers with medium GPA (8.03%).

As would be expected 98.2 percent of those prepaying loans had borrowed modest amounts and none had borrowed large amounts.

The following is suggested as a reason for the largest prepayment rate among the borrowers with minimal GPA. These may be students, who as freshmen, received loans based on high school academic performance and do not make satisfactory grades to stay in college, thereby leave school with modest loans and low grades. This group then may repay this at the earliest possible opportunity.

Suggestions for Further Study

There are other factors which could predict loan repayment attitudes and which might be studied. Some suggestions are listed below:

1. Sex
2. Marital status at the time of the loan
3. College in which enrolled
4. Number of hours or the degree completed

5. Social background (rural, urban, region of country)

6. Economic conditions of society at termination of school

7. Change in attitudes toward repayment over several years.

A study of these independently or in combination are suggested.

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APPENDIX A

Date

Mr. U. R. Delinquent
1010 Late Street
Sorry, Iowa Zip Code

Dear Mr. Delinquent:

We are concerned because you have not replied to our last two statements for the 19 , and 19 , monthly payments on your National Defense Student Loan.

Student loans are granted to needy, capable students to assist them in completing their education with the belief that they will prove themselves worthy of the loans. Those who provided references for you and reviewed your application felt you were reliable and deserving of the loan.

Repaying this loan in accordance with your written agreement will uphold the faith placed in you by your friends, University officials, and the United States Government. Prompt repayments maintain a good credit rating and also provide funds which are immediately needed to give to other needy and worthy students the same help you received.

Please forward your past due payment of $ immediately. This amount consists of $ for your through (or and)* 19 scheduled monthly principal payments of $ each, $ accrued interest from 19 through 19 and a $ delinquent charge. In addition, your next monthly payment of $ will be due 19 . Your remittance should be made payable to the Kansas State University NDSL and sent to the Comptroller's Office, Kansas State University, Manhattan, Kansas, 66502.

Sincerely,

Earl F. Greene
Associate Comptroller

EFG:

cc: Director of Aids & Awards
Borrower's Co-signer

*If more than two months are involved, use through; otherwise, use and.

letter #211

Date

Mr. U. R. Delinquent
1010 Late Street
Sorry City, Iowa Zip Code

Dear Mr. Delinquent:

We are very disappointed and concerned because you have not replied to our notices and letter regarding the past due payment on your National Defense Student Loan. Those of us who work with the student loan program felt you were worthy of your loan and granted it to you in good faith.

Our National Defense Student Loan Fund consists of United States Government and University trust funds for which we are strictly accountable and which we must administer with great care and completeness. Therefore, unless we receive your past due payment of $ within the next 15 days, it will become necessary for us to request payment from your co-signer. That amount consists of $ for your ,19 through , 19 scheduled monthly principal payments of $ each, $ accrued interest from 19 through 19 and $ delinquent charge.

We are sure you will want to avoid the embarrassment this action will create by sending us your payment now. Your remittance should be made payable to the Kansas State University NDSL and sent to the Comptroller's Office, Kansas State University, Manhattan, Kansas, 66502.

Sincerely,

Earl F. Greene
Associate Comptroller

EFG:

cc: , Director of Aids & Awards
Borrower's Co-Signer

letter #212

Date

Mr. Will B. Sorry
2020 Sad Avenue
Moneytown, Hawaii Zip Code

Dear Mr. Sorry:

You have been receiving copies of our correspondence regarding Mr. U. R. Delinquent's past due National Defense Student Loan payment since you co-signed the $ loan granted to him.

We still have not received a reply from Mr. Delinquent concerning his past due payment of $ and must, therefore, request this payment from you. This amount consists of $ for his 19 , through 19 scheduled monthly principal payments of $ each and $ accrued interest from 19 through 19 and a $ delinquent charge. Your remittance should be made payable to the Kansas State University NDSL and sent to the Comptroller's Office, Kansas State University, Manhattan, Kansas, 66502.

Sincerely,

Earl F. Greene
Associate Comptroller

EFG:

cc: , Director of Aids & Awards
Borrower

letter #213

Date

Mr. U. R. Delinquent
Address
City, State Zip Code

Mr. Will B. Sorry
2020 Sad Avenue
Moneytown, Ohio Zip Code

Dear Mr. Delinquent and Mr. Sorry:

We still have not received a reply to our notices and letter* regarding the past due payment on Mr. Delinquent's National Defense Student Loan.

Our National Defense Student Loan Fund consists of United States Government and University trust funds for which we are strictly accountable and which we must administer with great care and completeness. Therefore, unless we receive this past due payment of $ within the next 15 days, it will be necessary for us to transfer this account to the Kansas Attorney General for collection. This amount will consist of $ for his 19 through 19 scheduled monthly principal payments of $ each, $ additional interest that accrued from 19 through 19 and a $ delinquent charge.

We are sure you will want to avoid the embarrassment this action will create by arranging this payment at once. The remittance should be made payable to the Kansas State University NDSL and sent to the Comptroller's Office, Kansas State University, Manhattan, Kansas, 66502.

Sincerely,

Earl F. Greene
Associate Comptroller

EFG:

cc: , Director of Aids & Awards

Enc: Student's copy of Delinquent Report to Registrar

*and telephone call (if person was called)

Send letter Certified Mail Return Receipt Requested

letter #214

Date

Mr. Kent Frizzell
Attorney General
State House
Topeka, Kansas 66612

RE: N.D.E.A. Loan to

Dear Mr. Frizzell:

We are enclosing a copy of the National Defense Student Loan note and repayment agreement signed by and a sheet showing the status of this delinquent loan. We respectfully request that you collect the amount due ( ) which should be remitted to the Kansas State University NDSL, Comptroller's Office, Kansas State University, Manhattan, Kansas 66502.

Sincerely,

Ralph H. Perry
Comptroller

RHP:jd

Enclosures (3)

ATTENTION:

1. Attach xerox copies of the promissory note and repayment agreement (both sides)
2. Do not forget to make Mr. Perry a copy of the attached schedule (do not use onionskin paper)
3. Make a xerox copy of both letters for our files

letter #215

Name and Last Known Address of Borrower

Borrower's Name
Street
City, State Zip Code

September 1962 thru June 1966
Curriculum -
Grade Point Average - 3.151

Name and Last Known Address of Co-signer

Co-signer's Name
Street
City, State Zip Code

Amount Loaned
January 28, 1966..... $500.00

Amount Paid	Total	Service chg.	Interest	Principal	
June 30, 1967	$50.00	$9.00	$ 3.75	$37.25	
May 24, 1968	63.88		13.88	50.00	
TOTALS	$113.88	$9.00	$17.63	$87.25	87.25

Principal Outstanding..... $412.75

Amount Delinquent

Principal payments due:	
July 1, 1968.....	$ 13.97
August 1, 1968.....	13.97
September 1, 1968.....	13.97
October 1, 1968.....	13.97
November 1, 1968.....	13.97
Interest on $412.75 from 6-1-68 through 10-31-68.....	5.15
Service charge on delinquent payment.....	16.00
Total delinquent payment as of November 1, 1968.....	$ 91.00

Actions Taken to Collect the Delinquent Payment

Our usual collection procedures have been followed and consist of mailing a notice about 30 days before the due date; a second notice 5 days after the due date; a letter 15 days after the due date; a second letter 30 days after the due date; a third letter to the co-signer 45 days after the due date; telephoning the borrower if possible 60 days after the due date; a fourth letter 75 days after the due date at which time the borrower's records are attached; and then transferring the account to the Kansas Attorney General for collection.

APPENDIX B

EXAMPLE OF WORK SHEET

Name	Social Security Number	Termination Date	Amount of Loan	Repayment Plan	No of Delinquencies	Mo of Delinquencies	GPA

NATIONAL DEFENSE STUDENT LOAN REPAYMENTS AT KANSAS STATE UNIVERSITY AS RELATED TO GPA AND LOAN SIZE

by

DONALD G. MILLER

B.S. Kansas State University, 1960

AN ABSTRACT OF A MASTER'S THESIS

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

Department of Education

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1969

The National Defense Student Loan (NDSL) program has been in operation for ten (10) years and many loans are well into the payout stages. This gives adequate records of repayments and affords an opportunity to study factors that might be predictors of repayment habits.

The purpose of this study was to determine if college grades and size of loans might be a predictor of repayment habits of NDSL borrowers.

One thousand three hundred seventy four (1374) NDSL borrowers who terminated their education before September 1, 1966, were studied. The relationships between Grade Point Average (GPA) or loan size and repayment habits were considered. The breakdown for the study of grades were (1) high GPA (above 3.000), (2) medium GPA (2.200-2.999) and (3) minimal GPA (below 2.200) on a 4.000 grading standard. The size of loan was divided into three categories: (1) modest loans (below $1500), (2) medium loans ($1500-3000) and (3) large loans ($3000+).

Repayment habits were studied as of January 1, 1969 for borrowers who prepaid loans, as well as those who were delinquent at various levels.

The following hypotheses were suggested:

1. Borrowers with higher grades would be less likely to have repayment delinquency than those with lower grade point averages. Also, borrowers with higher grades would have a higher prepayment rate.

2. Borrowers with the smaller amount borrowed would have a lower delinquency rate and higher prepayment rates.

The results of this study were summarized as follows:

1. Borrowers with a GPA of 3.000 or better had significantly less delinquencies at both levels than borrowers with GPA between 2.200 and 2.999. Borrowers with GPA below 2.200 had significantly more delinquencies than borrowers with higher grades.

2. Borrowers with loans of $3000 or more had a significantly higher number of delinquencies at the one (1) or more delinquency level. At the same level borrowers with loans below $1500 had a slightly better repayment record than borrowers with loans between $1500-3000. This, however, was not true at the higher levels of delinquency.

3. Borrowers with modest loans (less than $1500) prepaid at a significantly higher rate than those with medium loans ($1500-3000) and borrowers with large loans ($3000+) had not made any prepayments.

4. Borrowers with the highest prepayment rate were those with minimal GPA, followed by those with high GPA. The lowest prepayment rate was established by those with medium GPA.

It could be concluded that loan officers and committees (if they are concerned primarily with loan repayment problems) might be justified in using grades as a factor in granting loans. However, the amount which the student borrows during his college career is not a significant factor in predicting repayment habits.

It also should be pointed out that seventeen (17) borrowers became delinquent to the extent of requiring legal action as an attempt to make good the loans. This is only 1.237 percent of the group studied.